

February 09, 2017

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES-Line 3
Pace Project No.: 1282317

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Cory Hertling
Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107

Alaska Certification UST-107

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1282317001	WS-002 Scrubber Make-Up	Water	02/01/17 09:15	02/01/17 13:50
1282317002	WS-003 Thickener Overflow	Water	02/01/17 09:05	02/01/17 13:50
1282317003	WS-003 Thickener Overflow	Water	02/01/17 09:05	02/01/17 13:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1282317001	WS-002 Scrubber Make-Up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1282317002	WS-003 Thickener Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1282317003	WS-003 Thickener Overflow	EPA 300.0	DMB	2	PASI-V

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

Sample: WS-002 Scrubber Make-Up Lab ID: 1282317001 Collected: 02/01/17 09:15 Received: 02/01/17 13:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	117	mg/L	5.0	0.29	10	02/02/17 16:47	02/03/17 12:39	7440-70-2	
Magnesium, Dissolved	254	mg/L	5.0	0.67	10	02/02/17 16:47	02/03/17 12:39	7439-95-4	
Total Hardness, Dissolved	1340	mg/L	100	50.0	10	02/02/17 16:47	02/03/17 12:39		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	819	mg/L	20.0	10.0	10		02/04/17 02:06	14808-79-8	

Sample: WS-003 Thickener Overflow Lab ID: 1282317002 Collected: 02/01/17 09:05 Received: 02/01/17 13:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	748	mg/L	5.0	0.29	10	02/02/17 16:47	02/03/17 12:42	7440-70-2	
Magnesium, Dissolved	260	mg/L	5.0	0.67	10	02/02/17 16:47	02/03/17 12:42	7439-95-4	
Total Hardness, Dissolved	2940	mg/L	100	50.0	10	02/02/17 16:47	02/03/17 12:42		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	2050	mg/L	40.0	20.0	20		02/04/17 02:28	14808-79-8	

Sample: WS-003 Thickener Overflow Lab ID: 1282317003 Collected: 02/01/17 09:05 Received: 02/01/17 13:50 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	632	mg/L	5.0	2.5	5		02/04/17 02:50	16887-00-6	
Fluoride	13.9	mg/L	0.50	0.25	5		02/04/17 02:50	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

QC Batch: 105189

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1282317001, 1282317002

METHOD BLANK: 417865

Matrix: Water

Associated Lab Samples: 1282317001, 1282317002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	02/03/17 11:24	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	02/03/17 11:24	

LABORATORY CONTROL SAMPLE: 417866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	49.8	100	85-115	
Magnesium, Dissolved	mg/L	50	50.2	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 417867

417868

Parameter	Units	1282322001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	81.9	50	50	130	136	97	108	70-130	4	20	
Magnesium, Dissolved	mg/L	233	50	50	275	282	85	99	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 417869

417870

Parameter	Units	1282333001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	46.0	50	50	97.6	95.7	103	99	70-130	2	20	
Magnesium, Dissolved	mg/L	81.8	50	50	132	129	100	95	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

QC Batch: 105288 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1282317001, 1282317002, 1282317003

METHOD BLANK: 418267 Matrix: Water

Associated Lab Samples: 1282317001, 1282317002, 1282317003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	02/03/17 19:30	
Fluoride	mg/L	ND	0.10	0.050	02/03/17 19:30	
Sulfate	mg/L	ND	2.0	1.0	02/03/17 19:30	

LABORATORY CONTROL SAMPLE: 418268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.7	101	90-110	
Fluoride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	50	49.3	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 418269 418270

Parameter	Units	1282278002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1070	500	500	1600	1610	106	108	90-110	1	20	
Fluoride	mg/L	ND	25	25	25.6	25.6	102	102	90-110	0	20	
Sulfate	mg/L	51.6	250	250	318	317	106	106	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 418271 418272

Parameter	Units	1282313002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.4	100	100	109	109	107	106	90-110	1	20	
Fluoride	mg/L	<0.20	10	10	10.2	10.2	101	101	90-110	0	20	
Sulfate	mg/L	20.2	100	100	126	125	106	105	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES-Line 3

Pace Project No.: 1282317

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1282317001	WS-002 Scrubber Make-Up	EPA 200.7	105189	EPA 200.7	105225
1282317002	WS-003 Thickener Overflow	EPA 200.7	105189	EPA 200.7	105225
1282317001	WS-002 Scrubber Make-Up	EPA 300.0	105288		
1282317002	WS-003 Thickener Overflow	EPA 300.0	105288		
1282317003	WS-003 Thickener Overflow	EPA 300.0	105288		

REPORT OF LABORATORY ANALYSIS

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CLIENT: USS CORP

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orn,

Requested Analysis Filtered Y/N

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 2. *Title* _____
 3. *Journal* _____
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DATE

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A blank coordinate grid with x and y axes ranging from -10 to 10. The grid is composed of a 21x21 array of points, with the origin (0,0) at the center. The x-axis is labeled from -10 to 10, and the y-axis is labeled from -10 to 10. The grid is used for plotting the graph of the function $f(x) = 2x^2 - 12x + 14$.

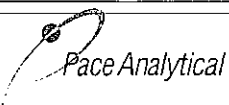
Figure 1

[illegible]

TE Signed: 2-1-17

MO#: 1282317

SAMPLE NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Paul Martirice		
SIGNATURE of SAMPLER:	Paul Martirice		
	DATE Signed:	2-1-17	
TEMP in C		Received on ice (Y/N)	
		Custody Sealed Cooler (Y/N)	
		Samples Intact (Y/N)	

	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

**Sample Condition
Upon Receipt**

Client Name:

Project #:

WO# : 1282317

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other: _____

PM: MMW Due Date: 02/15/17
 CLIENT: USS CORP

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☐ No
 Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: _____ Temp Blank? ☒ Yes ☐ No
 Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun
 Cooler Temp Read °C: 0.5 Cooler Temp Corrected °C: 0.8 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA
 Temp should be above freezing to 6°C Correction Factor: +0.3 Date and Initials of Person Examining Contents: 2-1-17 MT

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Date: 2/1/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)